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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,221	06/20/2007	Noboru Abe	46453	1699

20736 7590 07/06/2009  
MANELLI DENISON & SELTER  
2000 M STREET NW SUITE 700  
WASHINGTON, DC 20036-3307

EXAMINER
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VALENROD, YEVGENY

ART UNIT	PAPER NUMBER
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1621

MAIL DATE	DELIVERY MODE
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07/06/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,221	<b>Applicant(s)</b> ABE ET AL.	
	<b>Examiner</b> YEVEGENY VALENROD	<b>Art Unit</b> 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/7/09 has been entered.

Amendments to the claims filed 4/7/09 are acknowledged.

Applicants' remarks filed 4/7/09 have been considered.

Rejection of claims 1-4 under 35 USC 103(a) over Kodama in view of Harayama is withdrawn in view of applicants' amendment to the claims.

The claims have been amended to add an additional step to the previously claimed process. The additional step is oxidation of a sulfide to prepare the corresponding sulfoxide compound represented by formula (II) as depicted in claim 1. In view of the new amendment the following rejection is deemed proper:

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama et al. (EP 1,277,726 A1) in view of Harayama et al. (WO 2002/088075; US 2004/0116299 A1 is relied upon in this rejection as an English language equivalent) and in further view of a well-known process described in the instant specification on pages 16-17.

*Scope of prior art*

Kodama et al. teach a method for the preparation of 2-halobenzoic acid derivatives via halogenation (including iodination) of the benzene ring in the ortho position using a Palladium catalyst (page 6 lines 1-21). The structure of the substrate and the product includes the compounds of the instant invention **when moiety A is a**

**sulfoxide group** as defined on page 4, lines 4-20 and **R is CON(R17)R18** as defined on page 5, line 7. The teaching of Kodama can be summarized as: sulfoxide --> halogenated sulfoxide.

*Ascertaining the difference between prior art and instant claims*

Kodama et al. differ from the instant invention in that Kodama et al do not teach oxidation of the sulfonyl group as is required by the second step of the instantly claimed process.

Kodama et al also fail to teach a method of preparing the substrate for the halogenation reaction.

*Secondary reference*

Harayama et al. teach oxidation of phthalamide derivative (IV) to produce phthalamide derivative of formula (I) (Scheme on page 2, also paragraph [0014]). The compounds undergoing oxidation in Harayama et al. meet the core structural requirements of the oxidation substrates in the instant claims when  $n = 1$ . When  $n = 1$  in the compound of formula (IV), the compound comprises a sulfoxide group, oxidation of which produces compound (I) comprising a sulfone moiety. The oxidation step is therefore: halogenated sulfoxide --> halogenated sulfone.

*Admission of a well-known process by the applicant*

On page 16, paragraph [0024] of the instant specification applicant states that the process of preparing compound of formula (II) is a "well-known process". The said well-known process is described as following production processes 1 and 2. Production process 1 as depicted on page 17 of the specification includes a step where compound

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of formula (II-1) is oxidized to a compound of formula (II-1'). This step corresponds to the first step of the instantly claimed process, oxidation of sulfide to sulfoxide.

### *Obviousness*

Applicants invention is comprised of three steps; oxidation of sulfide to prepare corresponding sulfoxide, halogenation of the said sulfoxide followed by oxidation of the sulfoxide group of the halogenated compound to sulfone. All of these steps are known in the art as evidenced by applicants admission of a well-known method, Kodama et al. and Harayama et al. The compounds produced by the applicants' invention are known in the art (instant specification Background art and Harayama compound (I) on page 2). In order to produce the already known compounds one of ordinary skill in the art would find it obvious to combine the teachings of Kodama et al. and Harayama et al. with expectation of success. The expectation of success is present because cited references teach the above described reactions. One would also invariably need a method of preparing the substrate for the halogenation step taught by Kodama. Paragraph [0024] of the instant specification admits that the method of preparing compound of formula (II) is well-known in the art. In the scheme on page 17 of the instant specification a process where compound (II-1) is oxidized to compound (II-1') is presented as already being in the public possession. Without unexpected results, combining known processes is deemed obvious.

### ***Double Patenting***

Claims 1-4 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4 of U.S. Patent No. 7,057,067 ('067) in view of Harayama et al. (WO 2002/088075; US 2004/0116299 A1 is relied upon in this rejection as an English language equivalent) in further view of a well-known process described in the instant specification on pages 16-17.

Scope of claims 1 and 4 of '067

In claims 1 and 4 of '067 a process for halogenation of a benzoic acid derivative using palladium catalyst is claimed. In claim 4, further structural limitations include the compounds of the instant invention.

Ascertaining the difference

'067 does not claim oxidation step that follows halogenation.

'o67 does not teach a way of preparing the substrate for halogenation via oxidation of corresponding sulfide.

Secondary reference

Harayama et al. teach oxidation of phthalamide derivative (VI) to produce phthalamide derivative of formula (I). The compounds undergoing oxidation in Harayama et al. meet the core structural requirements of the oxidation substrates in the instant claims when in compound (VI)  $n=1$ .

Admission of a well-known process by the applicant

On page 16, paragraph [0024] of the instant specification applicant states that the process of preparing compound of formula (II) is a "well-known process". The said well-known process is described as following production processes 1 and 2.

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Production process 1 as depicted on page 17 of the specification includes a step where compound of formula (II-1) is oxidized to a compound of formula (II-1'). This step corresponds to the first step of the instantly claimed process, oxidation of sulfide to sulfoxide

#### Obviousness

It is obvious to combine processes in the same manner as the said processes are individually described in the art. One of ordinary skill in the art would find obvious to combine the oxidation step described as being a well known method by the applicant with halogenation step of '067 with oxidation step of Harayama et al. with an expectation of being successful at producing the compound of general formula (I) as defined by the instant claims.

#### **Conclusion**

Claims 1-4 are pending

Claims 1-4 are rejected

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yevgeny Valenrod whose telephone number is 571-272-9049. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yevgeny Valenrod/

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